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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/554,274

09/13/2006

Hans-Jurgen Albrecht

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LOCTITE CORPORATION
1001 TROUT BROOK CROSSING
ROCKY HILL, CT 06067

EXAMINER

COHEN, STEFANIE J

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

06/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/554,274	Applicant(s) ALBRECHT ET AL.	
	Examiner STEFANIE COHEN	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,7-9,15 and 18-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 7-9, 15 and 18-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18, 20-25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 18, claim 18 depends from claim 6 which has been canceled. Appropriate correction is required.

Regarding claims 20-25, the claims recite M1 and M2. It is not clear if applicant intends to claim the intermediate or final product of the solder alloy material.

Claims 1 and 23 recite "solder joint" or "solder material" and give the final alloy composition, but claim 20 and dependent claims 21-25 then refer to the materials M1 and M2 which are used to form the final solder material or joint composition. For the purpose of examination, the claims are interpreted to be referring to the final product. Clarification is needed if applicant is claiming one specific alloy composition which is the result of two soldering components or claiming two separate soldering components which results in the final alloy composition.

Further, regarding claims 23-25, it is not clear if applicant is claiming two soldering components which make the soldering material of claim 1 or two soldering

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components in combination with the soldering material of claim 1. There is no disclosure of a soldering material in combination a soldering component M1 and soldering component M2.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 7-9, 15,18-19, and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yin et al (6677179) in view of Yamashita et al (6156132) and further in view of Broomfield et al (6197253).

Yin, cols. 3 and 4, teaches a typical solder comprising 95.5% Sn, 3.8% Ag and .7% Cu which is Indalloy 241.

Although Yin teaches a solder comprising Sn, Ag and Cu, Yin does not teach including other elements to improve the alloy properties.

Yamashita, col. 6 lines 50-55, teaches a tin alloy comprising .1 wt% Ni. Yamashita, col. 2 lines 30-35, teaches the amount of nickel may be added in the amount of .2 or less percent by weight.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate nickel in the amount of Yamashita into the solder as taught by Yin because Yin, col. 6 lines 50-55, teaches adding nickel results in an improved alloy having excellent properties of tensile strength and heat resistance without impairment of ductility.

Although Yin and Yamashita teaches a solder comprising Sn, Ag, Cu and Ni, neither teaches including other elements to improve the alloy properties.

Broomfield teaches a tin alloy comprising antimony and bismuth. Broomfield, cols. 6 and 7, teaches a tin alloy comprising preferably about 1-3% by weight of the antimony and preferably about 1-3% by weight of bismuth.

Therefore, the Sb:Bi wt% ratio ranges from 3:1-1:3.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate antimony and bismuth in the amount as taught by Broomfield into the alloy as taught by Yin and Yamashita because Broomfield, col. 6 lines 20-35, teaches antimony in this amount increases the sharpness, to avoid rounded corners and form a pointed casting and increase the hardness of the casting. Further, Broomfield, cols. 6 and 7, teaches bismuth in this amount is sufficient to adequately fill a mold with a casting alloy while avoiding the problems associated with excess bismuth.

Regarding claims 20-25, the limitations of claims 21-25 are directed to the M1 and M2 components used to make the final soldering material or joint and thus are

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limitations directed to method of making the soldering material or joint which do not further distinguish the claimed material or joint from that of the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEFANIE COHEN whose telephone number is (571)270-5836. The examiner can normally be reached on Monday through Thursday 9:3am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Melvin Curtis Mayes can be reached on 5712721234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Stefanie Cohen

5/13/2009

SC

May 19, 2009

/Melvin Curtis Mayes/
Supervisory Patent Examiner, Art Unit 1793